

REMARKS

The non-final Office Action mailed April 1, 2010 has been carefully reviewed. From the Summary page, claims 1-16 were pending and indicated as rejected. The Drawings filed July 7, 2006 have been accepted. Acknowledgment has been made of Applicant's Claim for Priority. The Information Disclosure Statements filed July 7, 2006 and September 11, 2008 have been considered.

By this response, claims 1, 2, 4-9 and 11-15 have been amended. Claims 3, 10 and 16 have been canceled. No statutory new matter has been added. Support for the claim amendments can be found in the original specification.

Claim Objection

An objection was made to claim 16 for allegedly failing to further limit claim 15. The objection is moot upon cancellation of claim 16.

Claim Rejection under 35 U.S.C. § 101

Claims 15 and 16 stand rejected as being directed to non-statutory subject matter. The rejection as to claim 16 is moot upon claim cancellation. The rejection as to claim 15 is traversed.

Allegedly, claim 15 is rejected as being a software program per se under MPEP 2106.01. Applicant has clarified the language of claim 15 to define "a computer readable medium having instructions for causing an information processing system to operate". The program is tied to a processing system (e.g., CPU) which is considered statutory subject matter. Therefore, reconsideration and withdrawal of the rejection are requested by Applicant.

Claim Rejection under 35 U.S.C. §112, 2nd paragraph

Claims 1-16 stand rejected as allegedly indefinite. The rejection is traversed for claims 1, 2, 4-9 and 11-15, and is moot for canceled claims 3, 10 and 16.

In claim 1, the Examiner is uncertain whether the claimed means is “for virtual engine testing” or “for simulating a transition state”. Likewise, “simulation means for simulating” purportedly suffers the same deficiency.

It is also alleged that the phrases “virtual control means that emulates actual control means that control an actual engine”, “control value operation means that supplies a control value” and “...the control value operation means comprises means for causing a control value...” do not properly invoke 35 U.S.C. § 112, sixth paragraph.

Further, the phrase “...simulation means to be displayed on display means of an operator, ...” is allegedly unclear as to what constitutes “display means of an operator”. By this response, each of the above-mentioned contentions have been addressed in amended claim 1, *supra*. As such, the rejection as applied to claim 1 is overcome.

Regarding the phrase “a second step of assuming the transition engine model as a virtual engine” in claim 8, it is purportedly unclear who or how “assuming is performed. By this response, the phrase has been deleted from claim 8.

As to claim 9, the phrase “control means of an actual engine” purportedly does not properly invoke 35 U.S.C. § 112, sixth paragraph as a means or step plus function. Claim 9 also is said to lack antecedent basis as to the phrase “the transition test”. By this response, claim 9 has been amended, *supra*, to overcome these contentions.

As to claim 15, the Examiner has several criticisms. First, he was unclear whether the claimed means is “for simulation” or “for simulating a behavior of an engine” and thus purportedly impossible to determine the equivalents of the element under 35 U.S.C. § 112, sixth paragraph. In addition, the phrases “virtual control means that emulates actual control means that control an actual engine”, “control value operation means that supplies a control value”, and “...the control value operation means comprises means for causing a control value...” were said to fail to properly invoke 35 U.S.C. § 112, sixth paragraph as a “means or step plus function. Next, the phrase “...simulation means to be displayed on display means of an operator, ...” was alleged as unclear as to what constitutes “display means of an operator”. Further, the preamble has been considered indefinite in view of the phrase “a computer program that realized, by being installed on an information processing system.”

By this response, claim 15 has been amended to overcome each of the above-mentioned contentions.

For at least these reasons, withdrawal of the rejection under Section 112 is kindly solicited by Applicant.

Claim Rejection under 35 U.S.C. § 103(a)

Claims 1-15 stood rejected as allegedly unpatentable over Hagiwara et al. (US 2001/0023393 A1) in view of “A Matlab-Based Modeling and Simulation Package for Electric and Hybrid Electric Vehicle Design” by Butler et al. (hereinafter as Butler et al.). The rejection as to claims 3 and 10 is moot upon claim cancellation. The rejection as to claims 1-2, 4-9 and 11-15 is traversed.

The instrument, method and program thereof, as defined in claims 1, 8 and 15 respectively, relate to simulation and modeling “transition” characteristics of an engine. Transition characteristics are useful during instances of acceleration and deceleration (e.g., rotational speed and torque that change with time). Specifically, the invention evaluates performance criteria such as torque output and exhaust-gas by simulating controlled factors such as Exhaust Gas Recirculation (EGR) valve control or Variable Geometry Turbo (VGT) control. See, for example, paras. [0003, 0006-0009] of PG Publ. 2009/0187390.

As explained in connection with Applicant’s exemplary, preferred embodiment, data is obtained while driving an actual engine 12 and changing at least one controlled factor that is detected by a rotation detector 13 and measured by a measuring unit 14. See, for example, FIG. 1. The obtained data is transferred, either by a hard wire configuration or by LAN, to the virtual engine tester 1.

In tester 1, the data is transferred to the model creating unit 2 to develop a transition engine model. A simulator 5 simulates the behavior of the transition engine model (e.g., virtual engine). A control value operating unit 4 sends controlled factor values for operating the virtual engine to the virtual ECU 3. See paras. [0060-61]. The control value operating unit causes simulation results from the simulator to be displayed as a time-series graph on a display means. An end-user viewing the display means can point-and-drag data using a mouse to manipulate

control values. See para. [0066]. The control value operating unit updates the time-series graph according to the point-and-drag operation to view the new control values.

Applicant urges that the combination of Hagiwara and Butler fails to suggest a means for updating the controlled factor values displayed on the time-series graph by an operator. The Office Action analyzes Hagiwara in commenting, “Hagiwara et al does not expressly disclose correct the control value according to an operation by the operator”. See pg. 7. Reliance for this feature being in the art is purportedly based upon Butler.

As discussed in the Office Action, Butler “teaches a graphical simulation interface which has a drag and drop support to connect components and therefore updates a component”. A closer study of the Butler reference, especially in view of FIGs. 2-3, shows that component parts from a library are added/replaced to configure an optimal “component model” for an input/output interface. Thus, Butler is related to optimizing a simulation model. This is quite different from Applicant’s invention wherein a point-and-drag operation by an operator causes output controlled factor values that are viewable on time-series graph to be updated. Consequently, to those of ordinary skill in the art, the combination of Hagiwara and Butler would not have rendered the claimed invention *prima facie* obvious. For at least these reasons, withdrawal of the rejection as to claims 1, 8 and 15, and claims 2, 4-7, 9 and 11-14 depending therefrom, is earnestly solicited by Applicant.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Therefore it is respectfully requested that the Examiner reconsider all of the presently outstanding objection and rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefore are hereby authorized to be charged to **Deposit Account No. 02-4300, Attorney Docket No. 034201 M 005.**

Respectfully submitted,
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